Remarks

Claims 1-16 are pending in the application. Claims 1-3 and 11-16 were withdrawn, claims 4-8 and 10 were rejected, and claim 9 was objected to. Reconsideration of the claims is respectfully requested. No new matter has been added.

Rejection Under 35 U.S.C. § 102

Claims 4-8 and 10 were rejected under § 102(e) as being anticipated by Publication Number US 2003/0182/048 A1 issued to Wang et al. (hereinafter "Wang '048"). Applicants respectfully believe that a *prima facie* case has not been established for the following reasons.

Claim 4 recites "a method for controlling an internal combustion engine having a variable geometry turbocharger (VGT)." The method "calculates a feedforward VGT geometry command", "calculates an adjusted VGT geometry command", and monitors "whether a boost pressure sensor has failed." If the boost pressure sensor has failed, then the method sets "the VGT geometry according to the feedforward VGT geometry command." If the boost pressure sensor has not failed, then the method sets "the VGT geometry according to the adjusted VGT geometry command."

Wang '048 does not recite a method that calculates a feedforward VGT geometry command that is used to set a VGT geometry if a boost pressure sensor fails. Instead, Wang '048 uses a predefined value to control an actuator when a sensor fails. More specifically, "if both of the digitized compressor outlet pressure signal, COP_D, and the estimated compressor outlet pressure value, COP_E, are unreliable as a result of one or more sensor failures, block 104 is operable to control an appropriate one or more of the actuators ... in accordance with the predefined VGT command produced by the VGT override block 156" (see paragraph [0048] and Figure 5). In other words, in the event of a sensor failure, Wang '048 simply employs a predetermined value and does not calculate any VGT geometry command as required by claim 4.

Claim 4 also requires the step of "calculating an adjusted VGT geometry command ... wherein the adjusted VGT geometry command comprises adjusting the feedforward VGT geometry command." As previously discussed, Wang '048 does not teach or even remotely suggest calculating a feedforward VGT geometry command. Similarly, Wang '048 does not teach or even remotely suggest adjusting a feedforward VGT geometry command. Indeed, Wang '048 cannot logically disclose adjusting a feedforward VGT geometry command when it does not even calculate a feedforward VGT geometry command.

For these reasons, Applicants respectfully believe that a *prima facie* case has not been established for claim 4 and request that this rejection be withdrawn. Since claims 5 and 6 depend on claim 4, Applicants request that the rejection of these claims be withdrawn for the same reasons.

Claim 7 recites "a method for controlling an internal combustion engine having a variable geometry turbocharger (VGT)." The method "calculates a feedforward VGT geometry command", "calculates an adjusted VGT geometry command", and monitors "whether a turbo speed sensor has failed." If the turbo speed sensor has failed, then the method sets "the VGT geometry according to the feedforward VGT geometry command." If the turbo speed sensor has not failed, then the method sets "the VGT geometry according to the adjusted VGT geometry command."

Wang '048 does not recite a method that calculates a feedforward VGT geometry command that is used to set a VGT geometry if a turbo speed sensor fails. Instead, Wang '048 uses a predefined value to control an actuator when a sensor fails. More specifically, "if both of the digitized turbocharger speed signal, TS_D, and the estimated turbocharger speed value, TS_E, are unreliable as a result of one or more sensor failures, block 204 is operable to control an appropriate one or more of the actuators ... in accordance with the predefined VGT command produced by the VGT override block 248" (see paragraph [0080] and Figure 7). In other words, in the event of a sensor failure, Wang '048 simply employs a predetermined value and does not calculate any VGT geometry command.

Claim 7 also requires the step of "calculating an adjusted VGT geometry command ... wherein the adjusted VGT geometry command comprises an adjustment to the feedforward VGT geometry command." As previously discussed, Wang '048 does not teach or even remotely suggest calculating a feedforward VGT geometry command. Similarly, Wang '048 does not teach or even remotely suggest adjusting a feedforward VGT geometry command. Indeed, Wang '048 cannot logically disclose adjusting a feedforward VGT geometry command when it does not even calculate a feedforward VGT geometry command.

In addition, claim 7 requires "setting a VGT geometry ... if the turbo speed sensor has not failed and if adjustment to the feedforward VGT geometry command would not increase the rotational speed of the turbine shaft." Similarly, claim 7 also requires "setting the VGT geometry according to the feedforward VGT geometry command if the adjustment ... would increase the rotational speed of the turbine shaft and the turbo speed sensor has failed." Wang '048 provides absolutely no disclosure of setting a VGT geometry as a function of the condition of the turbo speed sensor *and* an increase in rotational speed of the turbine shaft as required by claim 7.

For these reasons, Applicants respectfully believe that a *prima facie* case has not been established for claim 7 and request that this rejection be withdrawn. Since claims 8 and 10 depend on claim 7, Applicants request that the rejection of these claims be withdrawn for the same reasons.

Even if a proper rejection could be established for claims 4 and 7, a *prima facie* case has not been established for claims 5 and 8. Claims 5 and 8 require that the "feedforward VGT geometry command is calculated from an engine speed and a demanded engine torque." Wang '048 does not disclose a feedforward VGT geometry command calculated from an engine speed and a demanded engine torque. In the Office Action, the Examiner pointed to Paragraph [0070] of Wang '048 for support (see Office Action, page 4). Paragraph [0070] recites "an in-range sensor failure model operable to compare a difference between the turbocharger speed signal, TS ... and the turbocharger speed estimate, TS_E, with a diagnostic

threshold to determine whether an in-range failure of the turbocharger speed sensor 74 exists." There is absolutely no disclosure of any calculation based on engine speed and a demanded engine torque as required by the present invention. As a result, Applicants respectfully believe that a *prima facie* case has not been established and respectfully request that this rejection be withdrawn.

A *prima facie* case has not been established for claim 6. Claim 6 requires "a variable nozzle turbocharger having movable vanes". Wang '048 is silent regarding a variable nozzle turbocharger having movable vanes. Indeed, the word "vane" is not found anywhere in Wang '048. Consequently, Applicants request that this rejection be withdrawn.

A *prima facie* case has not been established for claim 10. Claim 10 requires "limiting a maximum available engine torque if the turbo speed sensor has failed." Wang '048 is silent regarding limiting the maximum available engine torque if the turbo speed sensor has failed. Consequently, Applicants request that this rejection be withdrawn.

Conclusion

Applicants have made a genuine effort to respond to the Examiner's rejections in advancing the prosecution of this case. Applicants believe all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

By _____
Matthew M. Mietzel
Reg. No. 46,929
Attorney for Applicant

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BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400
Fax: 248-358-3351